Dale E. Van Zante

NASA Lewis Research Center
M.S. 5-11
21000 Brookpark Road
Cleveland, OH 44135
216-433-3640
dale.vanzante@lerc.nasa.gov

44 Vista Circle
North Olmsted, OH 44070
440-979-0462

OBJECTIVE: To perform experimental and/or computational analysis of turbomachinery components.

EDUCATION:

Iowa State University, Ames, IA
Ph.D. Mechanical Engineering, December 1997, GPA 3.7/4.0
Topic: *Study of a Rotor Wake Recovery Mechanism in a High-Speed Axial Compressor Stage*
Advisor: Dr. Theodore H. Okiishi

M.S. Mechanical Engineering, Dec. 1992, GPA 3.8/4.0
Topic: *Comparison of Slow and Fast-Response Instrument Flowfield Measurements Downstream of a Transonic Axial-Flow Compressor*
Advisor: Dr. Theodore H. Okiishi

B.S. Mechanical Engineering, Dec. 1990, GPA 3.8/4.0

EXPERIENCE:

1997 - Present — Post-Doctoral Research Associate
National Research Council/NASA Lewis Research Center, Cleveland, OH
Topic: Performance effects of bladerow interaction mechanisms
Simulated a transonic compressor stage using a 3D, time-accurate, multi-bladerow, Navier Stokes code to assess the influence of the downstream bladerow on rotor wake mixing loss.

1994 - 1997 — Pre-Doctoral Research Associate
Iowa State University/NASA Lewis Research Center, Cleveland, OH
Acquired two-channel Laser Fringe Anemometer measurements and used 3D Navier Stokes analysis to study rotor wake transport and recovery mechanisms in the stator passage of a high-speed axial compressor stage.

1991 - 1994 — Graduate Research Assistant
Iowa State University/NASA Lewis Research Center, Cleveland, OH
Acquired high-response pressure and temperature data and slow-response probe data downstream of an axial flow compressor rotor to assess instrumentation measurements errors in unsteady flow environments.

Summer 1991	Summer intern von Karman Institute for Fluid Dynamics, Brussels, Belgium Developed graphical output routines for an axial compressor design code.
Summer 1990	Staff Engineer Exxon Company USA, Baton Rouge Refinery, Baton Rouge, LA Worked in the rotating equipment branch developing a method to evaluate the predicted reliability of centrifugal pump designs.
1989	Undergraduate Research Assistant, Iowa State University, Ames, IA Investigated techniques for flow visualization using liquid crystals on stationary turbine blade models for a project sponsored by NASA Lewis.
1988	Undergraduate Research Assistant, Iowa State University, Ames, IA Performed thermodynamic system analysis. Project: Secondary power systems architecture for high Mach vehicles. Sponsored by General Dynamics.
Summer 1987, 1988	Computer Programmer Precision Pulley, Inc., Pella IA Customized company AutoCad software and developed engineering design software.
SKILLS:	UNIX Operating System (SGI, Cray, Sun) Visual3 CFD visualization package APNASA 3D Navier Stokes Multistage Turbomachinery solver MSU-TURBO 3D Time-accurate Navier Stokes Turbomachinery solver Laser Doppler Velocimetry High-response velocity/pressure/temperature measurement techniques
ACTIVITIES:	Advisor, Explorer Scouts, NASA-Aeronautics Post 630, 1996-98 Captain, Mechanical Systems Design Team, ISU Solar Car Project, 1990. President, Tau Beta Pi, Iowa State University, 1989-90. Member, ISU Ballroom Dance Company, 1990-91. Seminar Co-leader, University Honors Program, ISU, 1989. Officer, Livingston House, Helser Hall, Iowa State University, 1987-90.
HONORS:	Cardinal Key, University Honorary, 1990. Outstanding Mechanical Engineering Senior, 1991. Tau Beta Pi, National Engineering Honor Society, 1988. Pi Tau Sigma, Mechanical Engineering Honor Society, 1988. Phi Kappa Phi, Honor Society, 1988. University Honors Program, 1987-90.

PUBLICATIONS:

Van Zante, Dale E., Adamczyk, John J., Strazisar, Anthony J., and Okiishi, Theodore H., ”Wake Recovery Performance Benefit in a High-Speed Axial Compressor,” presented at ASME IGTI Gas Turbine and Aeroengine Conference, Orlando, FL, Paper No. 97-GT-535, June 1997.

Van Zante, Dale E., *Study of a Rotor Wake Recovery Mechanism in a High-Speed Axial Compressor Stage*, Ph.D. dissertation, Iowa State University, December 1997.

Van Zante, D., Fedderson, R., Suarez, M., and Sherman, P.J., “The Stochastic Structure of Downstream Pressure from an Axial Compressor,” Mechanical Systems and Signal Processing, Vol. 10, No. 4, 1996, pp. 413-422.

Van Zante, Dale E., Suder, Kenneth L., Strazisar, Anthony J., and Okiishi, Theodore H., “An Improved Aspirating Probe for Total-Temperature and Total-Pressure Measurements in Compressor Flows,” ASME Journal of Turbomachinery, Vol. 117, October 1995, pp. 642-649.

Van Zante, Dale E., *Comparison of Slow and Fast-Response Instrument Flowfield Measurements Downstream of a Transonic Axial-Flow Compressor*, M.S. thesis, Iowa State University, December 1992.

Van Zante, Dale E., and Okiishi, Theodore H., “Visualization of Boundary-Layer Development on Turbomachine Blades with Liquid Crystals,” TCRL-36, Engineering Research Institute, Iowa State University, December 1991.

REFERENCES:

Dr. Anthony J. Strazisar
Senior Scientist
M.S. 5-11
NASA Lewis Research Center
21000 Brookpark Road
Cleveland, OH 44135
216-433-5881

Dr. John J. Adamczyk
Senior Scientist
M.S. 5-9
NASA Lewis Research Center
21000 Brookpark Road
Cleveland, OH 44135
216-433-5829

Dr. Theodore H. Okiishi
Associate Dean for Research and Outreach
College of Engineering
Iowa State University
104 Marston Hall
Ames, IA 50011
515-294-4395